

A New Species of the Genus *Meta* (Araneae: Tetragnathidae) from Japan

Akio TANIKAWA¹⁾

谷川明男¹⁾: 日本産ドヨウグモ属の1新種

Abstract A new species of the genus *Meta* is described from Japan under the name of *M. japonica*. The spiders of the species have been wrongly identified with *Meta menardi* by the previous Japanese authors.

Meta menardi was described by LATREILLE (1804) from Europe. Then it was recorded widely in the Holarctic region by many authors [for literatures see ROEWER (1942), BONNET (1957) and PLATNICK (1989)]. After KOMATSU (1942) first recorded the spider from Japan, many Japanese authors reported it from various parts of the country (YAGINUMA, 1958, 1968, 1986; CHIKUNI, 1989, and others).

Recently, MARUSIK and KOPONEN (1992) described two new species, *Meta manchurica* and *M. americana* from Russia and United States of America, which were very closely related to *Meta menardi*. These species were identified with *Meta menardi* by the previous authors. MARUSIK and KOPONEN (1992) mentioned that *Meta manchurica* was possibly distributed in Japan and Korea. Their comment led me to reexamine the Japanese specimens which had been recorded as *Meta menardi*. After a careful reexamination, I came to the conclusion that the Japanese species was neither *M. menardi* nor *M. manchurica* but was a new species. It will be described in this paper.

All the type specimens designated in this paper are deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Before going further, I wish to express my hearty thanks to Dr. Hirotsugu ONO, National Science Museum (Nat. Hist.), Tokyo, for his constant guidance and revising the manuscript of this paper. For loaning invaluable specimens, I am deeply indebted to Dr. Norman I. PLATNICK, American Museum of Natural History, New York. My sincere thanks are also due to Mr. Ken-ichi KUMADA, Sagamihara, and Ms. Sachiko TAZOE, Yokohama, for offering the specimens used in this study.

Following abbreviations are used in this paper; MOA, median ocular area; AMNH, American Museum of Natural History, New York; NSMT, National Science Museum (Nat. Hist.), Tokyo.

1) Shichirigahama Senior High School, 2-3-1 Shichirigahama-higashi, Kamakura-shi, Kanagawa, 248 Japan

神奈川県立七里ガ浜高等学校 〒248 神奈川県鎌倉市七里ガ浜東 2-3-1

Accepted October 22, 1993

Genus *Meta* C. L. KOCH, 1836, s. str.

Meta japonica sp. nov.

(Figs. 1-8)

Meta menardi: KOMATSU, 1942, p. 64, fig. 7. — YAGINUMA, 1958, p. 26; 1968, p. 69, pl. 32, fig. 177.

Meta menardii: YAGINUMA, 1986, p. 124, fig. 66-4, pl. 36, fig. 1. — CHIKUNI, 1989, pp. 88, 222, fig. 84 [nec *M. menardii* LATREILLE, 1804].

Type series. Holotype: ♂, Bussekizan-shōnyūdō Cave, Ōtaki-mura, Saitama Pref., Japan, 22-XI-1976, K. KUMADA leg. (NSMT-Ar 3042). Allotype: ♀, same data as for the holotype (NSMT-Ar 3043). Paratypes: 2♂♂ 1♀, Nakatonbetsu-shōnyūdō Cave, Esashi-gun, Hokkaido, 28-IX-1978, K. KUMADA leg. (NSMT-Ar

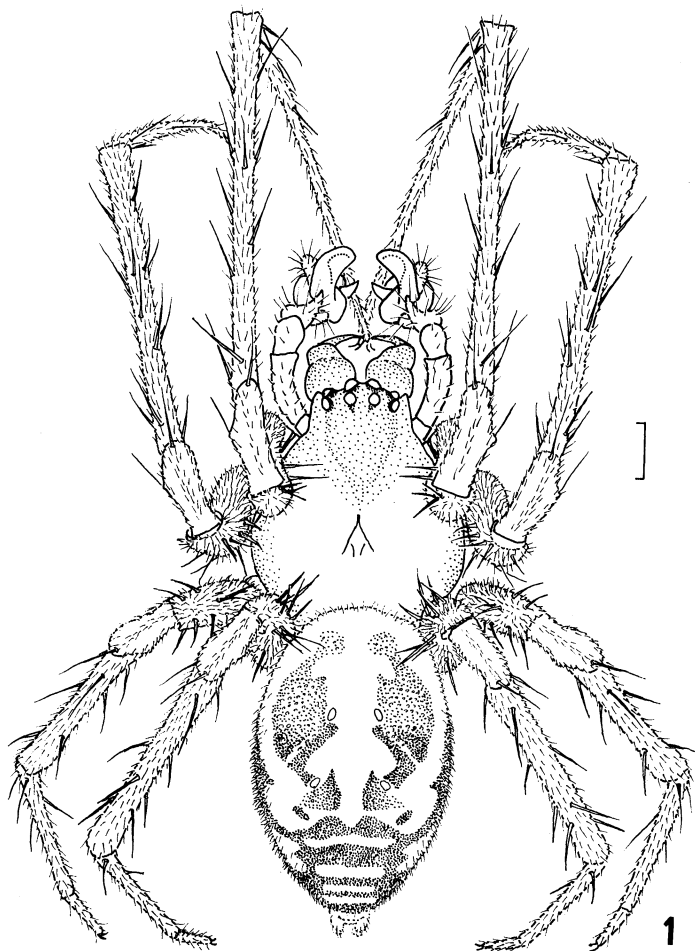


Fig. 1. *Meta japonica* sp. nov., dorsal view of male holotype. (Scale: 1 mm.)

Table 1. Measurement of leg segments of *Meta japonica* sp. nov. (in mm; ♂/♀).

Leg	Tarsus	Metatarsus	Tibia	Patella	Femur	Total
I	2.75/2.83	8.21/7.92	8.17/7.96	2.25/2.42	7.83/7.75	29.21/28.88
II	2.29/2.38	6.54/6.58	6.08/6.08	2.08/2.33	6.75/6.88	23.74/24.30
III	1.63/1.83	4.38/4.25	3.63/3.63	1.50/1.67	5.25/5.58	16.39/17.21
IV	1.71/1.92	5.42/5.75	4.83/4.83	1.67/1.83	6.25/6.88	19.88/21.71

3044–3046); 1♀, Katashina-mura, Tone-gun, Gunma Pref., 3~5-VII-1981, A. TANIKAWA leg. (NSMT-Ar 3047); 2♀♀, same data as for the holotype (NSMT-Ar 3048–3049).

Other specimens examined. 3♀♀, Nakatonbetu-shônyûdô Cave, Esashi-gun, Hokkaido, 28-IX-1978, K. KUMADA leg.; 1♀, Katashina-mura, Tone-gun, Gunma Pref., 3~5-VII-1982, S. TAZOE leg.

Specimens examined for comparison. *Meta americana* MARUSIK et KOPONEN, 1992: holotype, ♂, Neshaminy Cr. (75°3'W, 40°16'N), Horseshoe Bend, N.E. of Jamison, Pennsylvania, U.S.A., VI-1954, W. IVIE leg. (AMNH); paratypes, 1♂1♀, same data as for the holotype (AMNH); 1♂1♀, 21~30-IX-1953, same locality and collector as for the holotype (AMNH).

Description [based on the holotype ♂ and the allotype ♀ from Bussekizan-shônyûdô Cave; variations are given in parentheses]. Measurement (in mm). Body length ♂ 9.70 (8.70–9.70), ♀ 10.94 (9.50–12.88); carapace length ♂ 4.75 (4.65–4.83), ♀ 5.11 (4.30–5.71), width ♂ 4.00 (3.93–4.00), ♀ 3.94 (3.38–4.59); abdomen length ♂ 5.28 (5.28–5.41), ♀ 6.77 (5.47–9.00), width ♂ 3.58 (3.12–3.58), ♀ 4.42 (4.42–6.80). Length of legs of the holotype ♂ and the allotype ♀ from Bussekizan-shônyûdô Cave as shown in Table 1.

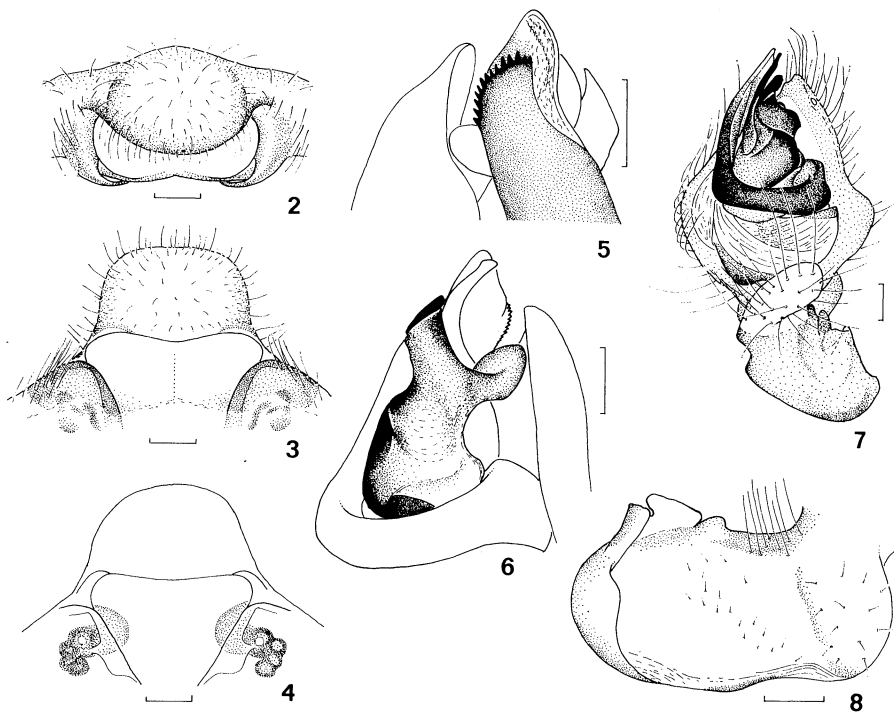
Male. Carapace length / width 1.19 (1.18–1.23); MOA length / width 1.00 (0.99–1.02), anterior width / posterior width 0.91 (0.91–0.93). Chelicera with 3 promarginal and 5 (4–5) retromarginal teeth. Labium length / width 0.76 (0.74–0.78); sternum length / width 1.30 (1.19–1.30). Length of leg I / carapace 6.15 (6.11–6.24). Male palp as shown in Figs. 5–8. Abdomen length / width 1.47 (1.47–1.74).

Female. Carapace length / width 1.30 (1.23–1.30); MOA length / width 0.97 (0.97–1.11), anterior width / posterior width 0.87 (0.84–0.90). Chelicera with 3 promarginal and 5 (4–5) retromarginal teeth. Labium length / width 0.72 (0.62–0.72); sternum length / width 1.23 (1.18–1.26). Length of leg I / carapace 5.65 (5.42–5.93). Abdomen length / width 1.53 (1.15–1.53). Female genitalia as shown in Figs. 2–4.

Coloration and markings. Male and female: Carapace brown, cepharic part darker; abdomen pale brown with dark brown markings (Fig. 1).

Range. Japan.

Remarks. This species is closely related to *Meta manchurica* MARUSIK et KOPONEN, 1992 and *Meta americana* MARUSIK et KOPONEN, 1992. In male, *M. japonica* seems to be more closely related to *M. manchurica* than to *M. americana*. But in female, it seems to be more closely related to *M. americana*. It is indefinite, which one is closer to *M. japonica*.



Figs. 2-8. *Meta japonica* sp. nov. — 2. Epigynum, ventral view. 3. Same, posterior view. 4. Same, cleared. 5. Distal part of male palpal conductor, prolateral view. 6. Embolic apophysis, retrolateral view. 7. Male palp, ventral view. 8. Paracymbium of male palp, dorsal view. (Scales: 0.25 mm.)

Meta japonica can be distinguished from *M. manchurica* by the shape of the male palp, especially embolic apophysis and paracymbium (Figs. 6, 8; MARUSIK and KOPONEN, 1992, figs. 6-7). In the sizes of the denticles of the tips of the conductors, these two species are also different from each other (Fig. 5; MARUSIK and KOPONEN, 1992, fig. 15). In female, they can be separated much easily by the posterior view of the epigynum (Fig. 3; MARUSIK and KOPONEN, 1992, fig. 9).

Meta japonica can be easily distinguished from *M. americana* by the shape of the male palp, especially embolic apophysis and paracymbium (Figs. 6, 8; MARUSIK and KOPONEN, 1992, figs. 2-3). In the sizes of the denticles of the tips of the conductors, these two species are also different from each other (Fig. 5; MARUSIK and KOPONEN, 1992, fig. 14). In female, they resemble very closely each other, but can be separated by the shape of spermatheca.

Etymology. The specific name is derived from the native country of the species.

摘 要

サンロウドヨウグモは、従来 *Meta menardi* (LATREILLE, 1804) に同定されてきたが、再

検討の結果、新種であるとの結論に達したので、*Meta japonica* sp. nov. と命名して記載した。

References

- BONNET, P., 1955–1956. Bibliographia Araneorum, 2 (3), pp. 1927–3026. Toulouse.
- CHIKUNI, Y., 1989. Pictorial Encyclopedia of Spiders in Japan. 308 pp. Kaisei-sha, Tokyo. (In Japanese.)
- KOMATSU, T., 1942. Spiders from Saishô-dô Cave. *Acta arachnol.*, 7: 54–70. (In Japanese.)
- LATREILLE, P. A., 1804. Arachnides. In: *Histoire Naturelle Générale et Particulière des Crustacés et des Insectes*, 7, pp. 144–305, pls. LXII–LXIV. Paris. (Not seen.)
- MARUSIK, Y. M., & S. KOPONEN, 1992. A review of *Meta* (Araneae, Tetragnathidae), with description of two new species. *J. Arachnol.*, 20: 137–143.
- PLATNICK, N. I., 1989. Advances in Spider Taxonomy, 1981–1987. 673 pp. Manchester University Press.
- ROEWER, C. F., 1942. Katalog der Araneae von 1758 bis 1940. Bd. 1. 1040 pp. Natura, Bremen.
- YAGINUMA, T., 1958. Revision of Japanese spiders of family Argiopidae (1). I Genus *Meta* and a new species. *Acta arachnol.*, 15: 24–30.
- 1968. Spiders of Japan in Colour (enl. rev. ed.). 197 pp., 56 pls. Hoikusha, Osaka. (In Japanese.)
- 1986. Spiders of Japan in Color (n. ed.). 305 pp., 64 pls. Hoikusha, Osaka. (In Japanese.)